



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

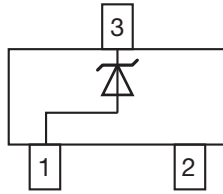
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



## Small Signal Zener Diodes



### FEATURES

- Silicon planar power Zener diodes.
- Standard Zener voltage tolerance is  $\pm 5\%$  with a "B" suffix (e.g.: MMBZ5225B-G), suffix "C" is  $\pm 2\%$  tolerance
- High temperature soldering guaranteed: 260 °C/4 x 10 s at terminals
- AEC-Q101 qualified
- ESD capability according to AEC-Q101: Human body model > 8 kV Machine model > 800 V
- Base P/N-G3 - green, commercial grade
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



| PRIMARY CHARACTERISTICS |                     |      |
|-------------------------|---------------------|------|
| PARAMETER               | VALUE               | UNIT |
| $V_Z$ range nom.        | 3 to 75             | V    |
| Test current $I_{ZT}$   | 1.7 to 20           | mA   |
| $V_Z$ specification     | Thermal equilibrium |      |
| Int. construction       | Single              |      |

| ORDERING INFORMATION     |                                    |                                |                        |
|--------------------------|------------------------------------|--------------------------------|------------------------|
| DEVICE NAME              | ORDERING CODE                      | TAPED UNITS PER REEL           | MINIMUM ORDER QUANTITY |
| MMBZ5225-G to MMBZ5267-G | MMBZ5225B-G3-08 to MMBZ5267B-G3-08 | 3000 (8 mm tape on 7" reel)    | 15 000/box             |
|                          | MMBZ5225C-G3-08 to MMBZ5267C-G3-08 |                                |                        |
|                          | MMBZ5225B-G3-18 to MMBZ5267B-G3-18 | 10 000 (8 mm tape on 13" reel) | 10 000/box             |
|                          | MMBZ5225C-G3-18 to MMBZ5267C-G3-18 |                                |                        |

| PACKAGE      |        |                                      |                                   |                          |
|--------------|--------|--------------------------------------|-----------------------------------|--------------------------|
| PACKAGE NAME | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL        | SOLDERING CONDITIONS     |
| SOT-23       | 8.1 mg | UL 94 V-0                            | MSL level 1 (according J-STD-020) | 260 °C/10 s at terminals |

| ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ °C}$ , unless otherwise specified) |   |            |               |      |
|---|---|------------|---------------|------|
| PARAMETER   | TEST CONDITION                                      | SYMBOL     | VALUE         | UNIT |
| Power dissipation   | On FR - 5 board using recommended solder pad layout | $P_{tot}$  | 225           | mW   |
|   | On alumina substrate                                | $P_{tot}$  | 300           | mW   |
| Zener current   | See table "Electrical Characteristics"              |            |               |      |
| Thermal resistance, junction to ambient air                                       | On FR - 5 board using recommended solder pad layout | $R_{thJA}$ | 556           | K/W  |
| Junction temperature, maximum   |   | $T_j$      | 150           | °C   |
| Storage temperature range   |   | $T_{stg}$  | - 65 to + 150 | °C   |
| Operating temperature range   |   | $T_{op}$   | - 55 to + 150 | °C   |



| ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |              |                                    |              |           |                         |     |                                   |                       |                         |
|---|--------------|------------------------------------|--------------|-----------|-------------------------|-----|-----------------------------------|-----------------------|-------------------------|
| PART NUMBER   | MARKING CODE | ZENER VOLTAGE RANGE <sup>(1)</sup> | TEST CURRENT |           | REVERSE LEAKAGE CURRENT |     | DYNAMIC RESISTANCE <sup>(2)</sup> |                       | TEMPERATURE COEFFICIENT |
|   |              | $V_Z$ at $I_{ZT1}$                 | $I_{ZT1}$    | $I_{ZT2}$ | $I_R$ at $V_R$          |     | $Z_Z$ at $I_{ZT1}$                | $Z_{ZK}$ at $I_{ZT2}$ | $\alpha_{VZ}$           |
|   |              | V                                  | mA           |           | $\mu\text{A}$           | V   | $\Omega$                          |                       | %/ $^{\circ}\text{C}$   |
|   |              | NOM.                               |              |           | MAX.                    |     | MAX.                              | MAX.                  | TYP.                    |
| MMBZ5225-G  | 725          | 3                                  | 20           | 0.25      | 50                      | 1   | 30                                | 1600                  | - 0.075                 |
| MMBZ5226-G  | 726          | 3.3                                | 20           | 0.25      | 25                      | 1   | 28                                | 1600                  | - 0.07                  |
| MMBZ5227-G  | 727          | 3.6                                | 20           | 0.25      | 15                      | 1   | 24                                | 1700                  | - 0.065                 |
| MMBZ5228-G  | 728          | 3.9                                | 20           | 0.25      | 10                      | 1   | 23                                | 1900                  | - 0.06                  |
| MMBZ5229-G  | 729          | 4.3                                | 20           | 0.25      | 5                       | 1   | 22                                | 2000                  | - 0.055                 |
| MMBZ5230-G  | 730          | 4.7                                | 20           | 0.25      | 5                       | 2   | 19                                | 1900                  | $\pm$ 0.030             |
| MMBZ5231-G  | 731          | 5.1                                | 20           | 0.25      | 5                       | 2   | 17                                | 1600                  | $\pm$ 0.030             |
| MMBZ5232-G  | 732          | 5.6                                | 20           | 0.25      | 5                       | 3   | 11                                | 1600                  | 0.038                   |
| MMBZ5233-G  | 733          | 6                                  | 20           | 0.25      | 5                       | 3.5 | 7                                 | 1600                  | 0.038                   |
| MMBZ5234-G  | 734          | 6.2                                | 20           | 0.25      | 5                       | 4   | 7                                 | 1000                  | 0.045                   |
| MMBZ5235-G  | 735          | 6.8                                | 20           | 0.25      | 3                       | 5   | 5                                 | 750                   | 0.05                    |
| MMBZ5236-G  | 736          | 7.5                                | 20           | 0.25      | 3                       | 6   | 6                                 | 500                   | 0.058                   |
| MMBZ5237-G  | 737          | 8.2                                | 20           | 0.25      | 3                       | 6.5 | 8                                 | 500                   | 0.062                   |
| MMBZ5238-G  | 738          | 8.7                                | 20           | 0.25      | 3                       | 6.5 | 8                                 | 600                   | 0.065                   |
| MMBZ5239-G  | 739          | 9.1                                | 20           | 0.25      | 3                       | 7   | 10                                | 600                   | 0.068                   |
| MMBZ5240-G  | 740          | 10                                 | 20           | 0.25      | 3                       | 8   | 17                                | 600                   | 0.075                   |
| MMBZ5241-G  | 741          | 11                                 | 20           | 0.25      | 2                       | 8.4 | 22                                | 600                   | 0.076                   |
| MMBZ5242-G  | 742          | 12                                 | 20           | 0.25      | 1                       | 9.1 | 30                                | 600                   | 0.077                   |
| MMBZ5243-G  | 743          | 13                                 | 9.5          | 0.25      | 0.5                     | 9.9 | 13                                | 600                   | 0.079                   |
| MMBZ5244-G  | 744          | 14                                 | 9            | 0.25      | 0.1                     | 10  | 15                                | 600                   | 0.082                   |
| MMBZ5245-G  | 745          | 15                                 | 8.5          | 0.25      | 0.1                     | 11  | 16                                | 600                   | 0.082                   |
| MMBZ5246-G  | 746          | 16                                 | 7.8          | 0.25      | 0.1                     | 12  | 17                                | 600                   | 0.083                   |
| MMBZ5247-G  | 747          | 17                                 | 7.4          | 0.25      | 0.1                     | 13  | 19                                | 600                   | 0.084                   |
| MMBZ5248-G  | 748          | 18                                 | 7            | 0.25      | 0.1                     | 14  | 21                                | 600                   | 0.085                   |
| MMBZ5249-G  | 749          | 19                                 | 6.6          | 0.25      | 0.1                     | 14  | 23                                | 600                   | 0.086                   |
| MMBZ5250-G  | 750          | 20                                 | 6.2          | 0.25      | 0.1                     | 15  | 25                                | 600                   | 0.086                   |
| MMBZ5251-G  | 751          | 22                                 | 5.6          | 0.25      | 0.1                     | 17  | 29                                | 600                   | 0.087                   |
| MMBZ5252-G  | 752          | 24                                 | 5.2          | 0.25      | 0.1                     | 18  | 33                                | 600                   | 0.087                   |
| MMBZ5253-G  | 753          | 25                                 | 5            | 0.25      | 0.1                     | 19  | 35                                | 600                   | 0.089                   |
| MMBZ5254-G  | 754          | 27                                 | 4.6          | 0.25      | 0.1                     | 21  | 41                                | 600                   | 0.09                    |
| MMBZ5255-G  | 755          | 28                                 | 4.5          | 0.25      | 0.1                     | 21  | 44                                | 600                   | 0.091                   |
| MMBZ5256-G  | 756          | 30                                 | 4.2          | 0.25      | 0.1                     | 23  | 49                                | 600                   | 0.091                   |
| MMBZ5257-G  | 757          | 33                                 | 3.8          | 0.25      | 0.1                     | 25  | 58                                | 700                   | 0.092                   |
| MMBZ5258-G  | 758          | 36                                 | 3.4          | 0.25      | 0.1                     | 27  | 70                                | 700                   | 0.093                   |
| MMBZ5259-G  | 759          | 39                                 | 3.2          | 0.25      | 0.1                     | 30  | 80                                | 800                   | 0.094                   |
| MMBZ5260-G  | 760          | 43                                 | 3            | 0.25      | 0.1                     | 33  | 93                                | 900                   | 0.095                   |
| MMBZ5261-G  | 761          | 47                                 | 2.7          | 0.25      | 0.1                     | 36  | 105                               | 1000                  | 0.095                   |
| MMBZ5262-G  | 762          | 51                                 | 2.5          | 0.25      | 0.1                     | 39  | 125                               | 1100                  | 0.096                   |
| MMBZ5263-G  | 763          | 56                                 | 2.2          | 0.25      | 0.1                     | 43  | 150                               | 1300                  | 0.096                   |
| MMBZ5264-G  | 764          | 60                                 | 2.1          | 0.25      | 0.1                     | 46  | 170                               | 1400                  | 0.097                   |
| MMBZ5265-G  | 765          | 62                                 | 2            | 0.25      | 0.1                     | 47  | 185                               | 1400                  | 0.097                   |
| MMBZ5266-G  | 766          | 68                                 | 1.8          | 0.25      | 0.1                     | 52  | 230                               | 1600                  | 0.097                   |
| MMBZ5267-G  | 767          | 75                                 | 1.7          | 0.25      | 0.1                     | 56  | 270                               | 1700                  | 0.098                   |

Notes

- Maximum  $V_F = 0.9\text{ V}$ , at  $I_F = 10\text{ mA}$
- (1) Measured at thermal equilibrium
- (2) The Zener impedance is derived from the 1 kHz AC voltage which results when an AC current having an RMS value equal to 10 % of the Zener current ( $I_{ZT1}$  or  $I_{ZT2}$ ) is superimposed on  $I_{ZT1}$  or  $I_{ZT2}$ . Zener Impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units

## TYPICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

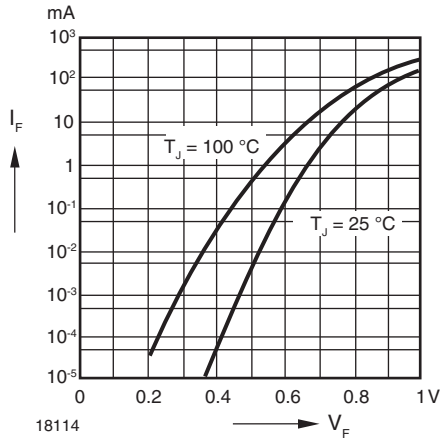


Fig. 1 - Forward Characteristics

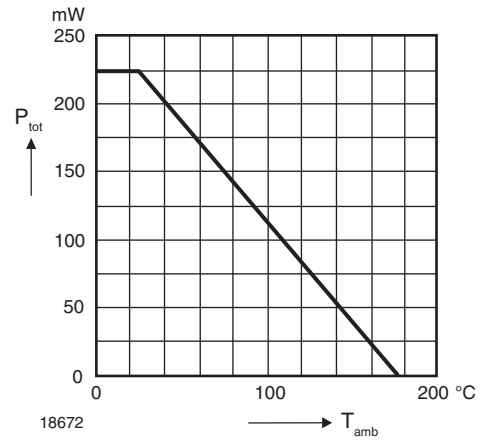
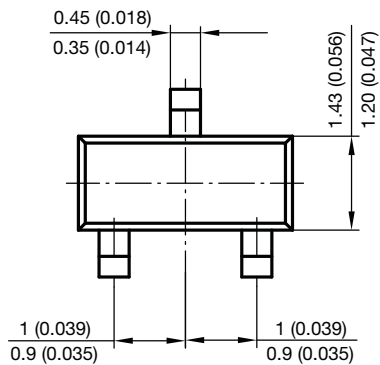
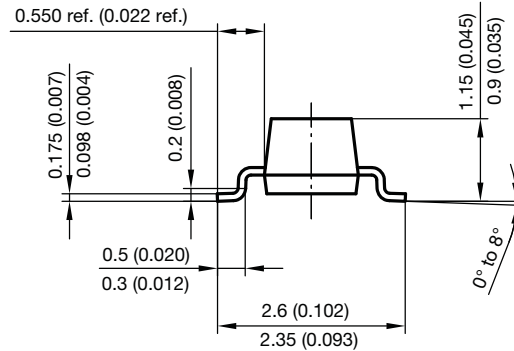
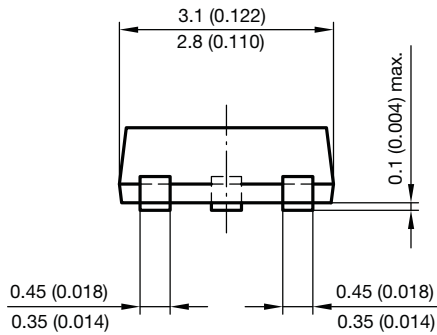
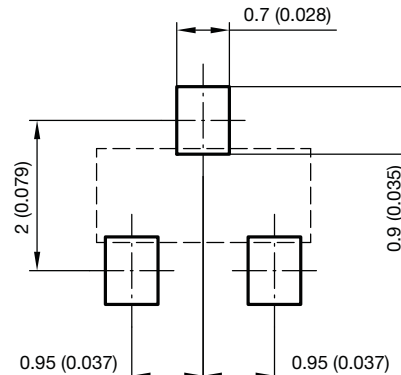


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

## PACKAGE DIMENSIONS in millimeters (inches): SOT-23



Foot print recommendation:





## **Disclaimer**

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.